

Appendix H. Glossary of Terms

Attenuation Relationship - A relationship that describes how ground motions (acceleration and velocities) decrease as a function of distance from the earthquake source.

Building Period - Buildings tend to shake at different speeds. The period tells us how long it takes for a building to shake back and forth one time. Tall buildings have longer periods on the order of 1 to 4 seconds. Short buildings move back and forth very rapidly and have periods on the order of 0.1 to 0.4 seconds. The building frequency is also a measure of the speed at which a building shakes.

Building Frequency - The building frequency is the reciprocal of the period, that is it is a measure of how many times the building shakes back and forth every second. If a building has a period of 2 seconds, its frequency is 0.5 Hz (cycles per second).

CAS - Chemical Abstracts Service registry number. This is a numeric designation assigned by the American Chemical Society's Chemical Abstracts Service that uniquely identifies a specific chemical compound.

Damage Ratio - Cost of repair as a fraction of replacement cost.

Direct Economic Loss - In this methodology the costs of structural and non-structural repair, damage to building contents, loss of building inventory, relocation expenses, lost wages and lost income.

GIS (geographic information system) - Software tool for displaying, analyzing and manipulating spatially related data. Data is stored in layers which can be overlaid and combined to map data.

HAZUS - A software package developed to estimate losses estimates due to natural hazards for the United States. The name is derived from *Hazards U.S.*

Indirect Economic Loss - In this methodology the long-term regional economic effects.

Liquefaction - A phenomenon where due to shaking, soil losses its strength and essentially acts like a liquid.

MMI (Modified Mercalli Intensity) - A system for measuring the damage that occurs in an earthquake. The scale is measured from I to XII. A I is not felt by people and a XII causes essentially total damage to the built environment.

NEHRP -National Earthquake Hazards Reduction Program

PESH (potential earth science hazards) - In this methodology PESH is that group of physical attributes and consequences that describe the potential damageability of the earthquake. These include the ground motion (PGA, PGV, spectral acceleration, spectral velocity), ground failure (liquefaction, landslide and surface fault rupture), tsunami and seiche.

PGA - Peak Ground Acceleration. The largest acceleration that can be expected at a particular site due to an earthquake.

PGD - Permanent Ground Deformation - This is a quantification of the ground failure that occurs as a result of liquefaction, landslides and surface fault rupture. It is measured in inches and describes how far the surface of the ground moves.

PGV - Peak Ground Velocity

Seiche - Waves in a lake or reservoir that are induced because of ground shaking.

Shear Waves - Shear waves (S waves) are one of the many types of waves that are generated by an earthquake. Each type of wave shakes the ground differently (some fast, some slow, some up and down, some sideways).

Shear Wave Velocity - Shear waves travel through different types of soils at different velocities (speeds). Shear wave travel more quickly through rock and hard soils and more slowly through soft soils. The shear wave velocity can then be used as a measure of the type of soil.

Spectral Acceleration - The acceleration of earthquake motion at a specified building period. See definition of spectral velocity

Spectral Velocity - The velocity of earthquake motion at a specified building period. Earthquake shaking is a complex mixture of movements at different frequencies. Some of the shaking is fast and some of it is slow. Different buildings respond to different types of shaking. Short buildings tend to respond to fast shaking and tall buildings respond to slower shaking. Thus if an earthquake has a lot of fast shaking we would expect it to excite low rise buildings. By breaking apart the earthquake shaking and looking at one part at a time, in terms of building period, we can see which buildings will experience higher levels of motion.

Thematic Map - A map that uses color, patterns and/or symbols to graphically represent characteristics of a set of data. Graphical representations include shaded ranges, shaded individual values, bar charts, pie charts, graduated symbols and dot density.

TIGER files- Topologically Integrated Geographic Encoding and Referencing system. This is a system developed by the U.S. Census Bureau that can be used for inventory development. Files contain roads, streets, railways, waterways and census boundaries. See Section 6.8.5.

Tsunami - Tsunami translates as “harbor wave.” These ocean waves can be caused by the direct effects of subduction earthquake and the secondary effects of earthquake triggered submarine landslides. Their heights can be greater than 10 meters.